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ABSTRACT

This paper discusses the use of process-oriented research in early childhood programs. Process analysis is contrasted with outcome-oriented evaluation, the latter seen as prevalent in current research practice. Four functions of process analysis are: to describe current teaching practices, to train teachers, to monitor instructional programs, and to investigate relationships between classroom activities and pupil growth. Systems for observing the process of teacher-child interaction are categorized as either open, low-inference systems or closed, high-inference systems. The specimen-description technique is cited as an example of the former, while examples of closed systems are time-sampling, event-sampling and trait-rating. Methodological issues discussed relate to choice of appropriate instruments, reliability of observers, and degree of researcher control over selection and supervision of the program to be evaluated. (Author/BF)

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EVALUATION OF PRESCHOOL PROGRAMS

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EVALUATION OF PRESCHOOL PROGRAMS

The proliferation of day care facilities and early childhood education programs has brought about a growing concern with respect to the type and quality of care provided for children. The question of quality of early childhood care is crucial as suggested by research on the effects of the preschool environment and the development of intellectual and social-emotional competencies in young children. With an increasing number of children receiving care outside the home it is important to understand the effects this has on children. Thus, the key issues in research and evaluation in early childhood programs are similar to those at any educational level. However, as Ryan and Moffitt (1974) suggest traditional models and methods of evaluation research are inappropriate if they only employ the classical experimental model.

The traditional models that Ryan and Moffitt (1974), (Moffitt and Ryan, 1975) refer to generally are outcome models of evaluation research. Most evaluation of early childhood programs has taken this approach and report findings such as "remarkable and significant gains have been made in linguistic functioning" (Taylor et al. 1973) as a result of some particular program. Any number of other studies report similar findings. Beller (1973) reviews 15 studies of early childhood programs and only two mention any type of evaluation other than outcome evaluation. Even then the mention of other forms of evaluation was at best cursory. Essentially the traditional psychometric approach avoids many real issues. For instance, what aspects of the teaching procedure or teacher's behavior accounts for any changes that occur? If there is a lack of change what aspects of the program may account for it? What are the differences among various programs? The psychometric approach

offers no solutions to these questions and can not indicate differences between programs that result in the varied outcomes reported. For example, a study by de Lacey et al. (1973) reports a marked superiority of a structured preschool program over the more traditional preschool program. However, there is no indication as to the processes that account for the different results. Most other studies can be equally criticized. This is not to say that outcomes are unimportant. It is necessary in some cases to delineate programs that are the most effective for increasing outcomes such as language and intellectual skills in children. However, differences in programs can only be determined through process evaluation. A good example of this is provided by Charters and Jones (1973). They refer to a study which was designed to assess the outcome effects of differentiated staffing on student achievement. The evaluation study reached the conclusion of no consistent difference in achievement gains, the dependent variable, between differentiated and conventional staffing. Charters and Jones, who were at the same time undertaking a process evaluation, clearly show that there were no differences in the independent variable, the type of staffing, either. Thus, the programs which were evaluated and produced similar outcomes were not in fact different and should not have been expected to produce different results. As Charters and Jones point out, the outcome evaluation evaluated a non-event. This example indicates clearly the necessity of substantially more comprehensive research to analyze the content and processes of the programs to enable an understanding of the outcomes.

One method of broadening the research in early childhood education is to assume a medical model as suggested by Messick and Barrows (1972). As they indicate the medical model recognizes that prescriptions for treatment and its effectiveness must take into account not only the symptoms reported

but also the character of the organism, its ecology, and the processes that produce the desired effects. The remaining portion of the paper will examine process research as it relates to early childhood programs in three main categories, type of instrumentation, purposes of instruments and methodological considerations.

There are many types of instruments available that have been adapted for use in observing interaction between teachers and children. In fact, Rosenshine and Furst (1973) indicate that they have documented 120 different systems of process observation and this they see as an underestimate. With this number of observational techniques available it is necessary to categorize the various styles of the instruments. Gordon and Jester (1973) suggest a series of categories based on previous research. The initial style of observational technique is referred to as specimen description, in which the sequences of interaction are recorded by continuous note taking or audio-video tape. This style is characterized by a detailed recording of the behavior observed and is referred to as an open or low inference system as the raw data is available even after the observation is completed. This contrasts to a closed or high inference system of observation in which the data is coded during the observation. As such, the actual behavior of the individuals is not available - rather behaviors may be noted on a check list as they occur and inferences must then be made regarding the actual teaching behavior. There are obvious advantages to both systems. The open system offers a detailed record of behavior that can be examined with no inferences being made about the teaching behavior, analyzed and coded in a number of different ways over time. However, it represents a relatively expensive way of gathering data in time taken to collect, analyze and code the data. Closed systems allow for a sampling of behavior in a more efficient manner.

However, problems of interrater reliability, the fact that the actual behavioral interactions are not available and inferences must be made regarding the data, represent drawbacks to the closed systems. Ideally the open system using video tape represents the most comprehensive method of examining process variables. However, in many cases due to financial or time constrictions researchers must be satisfied with less than the ideal situation and work within the structure of a closed system. A type of closed system which has been used relatively extensively is referred to by Gordon and Jester (1973) as Time Sampling which is divided into sign and category systems. As Gordon and Jester (1973) indicate sign systems retain some elements of the specific behavior observed as they are listed in the observer's record form and he checks them off as they occur whereas in category systems this record of behavior is not available as the behavior exhibited is grouped under various labels.

Two other types of closed systems referred to by Gordon and Jester (1973) are event sampling and trait rating. During event sampling the observer records the various events that occur, such as arguments, as opposed to noting the specific behavior of individuals. In trait rating the observer notes the behavior and then makes an inference regarding the trait possessed by the person being observed. This latter method is, to say the least, somewhat subjective. If a closed system is to be utilized, a combination of scales which provide a time/sign and event sampling probably provide the most useful data for process analysis.

Process analysis can serve a number of different purposes. Rosenshine and Furst (1973) suggest four useful classifications for process analysis. The first is to describe current teaching practices. As is obvious, description is the predominent purpose and the data from this type

of analysis is intended to provide some basic data on teaching in early childhood settings. In other words, it provides information regarding the state of early childhood programs. Once there is an adequate baseline, these descriptive studies should lead to correlational and experimental studies rather than more descriptive studies. However, in relation to the school system experimental studies have not followed descriptive studies, rather there has been a plethora of descriptive studies. It is to be hoped that research in early childhood education will not follow this pattern.

The second purpose process analysis can be utilized for is to train teachers (Rosenshine and Furst, 1973). Process analysis can provide a teacher, experienced or inexperienced, with feedback on his own behavior. As well, it can provide teachers with procedures to classify instructional methods and models of instruction. This function could be especially useful in training teachers for early childhood programs. For instance, if a specimen description method through the use of video tape was used to observe beginning teachers and the beginning teacher analyzed the teaching process with the aid of an expert teacher it is likely that new teachers would gain considerable insight into the teaching process. Further, if video tapes of an expert teacher working with a class were available, the new teacher would be able to contrast and compare teaching styles and attempt to model some of the behavior to discover which teaching methods or styles would be effective for him.

A third function of process analysis is to monitor instructional programs (Rosenshine and Furst, 1973). There are many experimental approaches being implemented in early childhood education to discover the most effective ways of working with young children. Any two programs may have quite different goals yet the question can still be raised as to whether the actual

functioning of the programs is different. The example provided by Charters and Jones (1973) and discussed previously indicates the necessity of monitoring programs to discover if the intentions of the program developer are being implemented. Without evidence that the processes involved in various programs differ, educators should not assume that different goals necessarily mean different instructional behavior within programs. If in practice the instructional activities in a particular program represent low implementation of a program, it is unreasonable to judge the success or failure of the program as it has not been implemented in any true sense.

The final function of process evaluation is to investigate relationships between classroom activities and pupil growth (Rosenshine and Furst, 1973). This function is particularly important for early childhood programs and represents a combination of outcome and process analysis. The outcomes of a particular program are measured perhaps through a pre-test, post-test methodology and are then related to the teaching process through process evaluation. One instrument which has been used in this fashion is the Observation Schedule and Record (OSCAR) (Medley and Metzel, 1958). However, the OSCAR needs some revision to be used in the preschool setting. Several recent studies (Moffitt and Ryan, 1975; Taylor, 1975) have successfully used the OSCAR to evaluate programs and relate outcomes and processes. Some earlier work by Soar and Soar (1972) utilizing the Teacher Practices Observation Record has also related outcomes and processes. However, on the whole most studies examine either outcomes or processes in isolation. At the present stage, the research in early childhood education should be moving away from these singular evaluations. Yet many persons working in the area neglect the process analysis. For example, a recent paper by Vane

(1976) entitled Problems In and Strategies For Evaluating Preschool Programs, totally ignores the whole area of process evaluation and concentrates only on outcome research. As Moffitt and Ryan (1975) indicate, traditional models of evaluation are inappropriate for early childhood education. Researchers must begin to investigate in a detailed and systematic sense the relationship between classroom activities and student growth.

There are a number of methodological issues that should be considered before a process analysis is undertaken. One of the major problems is deciding on the appropriate instrument to observe the process variables. There is a large pool of instruments for observing educational settings and rather than developing new instruments researchers should begin to utilize existing ones to test their usefulness. Many instruments have been utilized in only the study for which they were developed. There is no need for a further proliferation of instruments. Soar and Soar (1972) suggest several useful instruments, the Florida Affective Categories Measure and Teacher Practices Observation Record. As well, with some modification, the Observation Schedule and Record developed by Medley and Metzel (1958) will prove to be a useful tool. These instruments or a combination of them will, in all likelihood, sample the variables that most researchers wish to examine. Thus, the results of various studies will be comparable as they will examine common variables. Further, as many researchers use these instruments it will provide a broad data base. As Rosenshine and Furst (1973) indicate, it is best to be suspicious of variables and instruments which do not have a data base.

A second methodological issue relates to observer reliability. Typically reliability coefficients are calculated on total talleys. What is necessary is to calculate reliability coefficients on each event observed

to discover if the observers are in agreement regarding specific events (Mitchell, 1969). Observer reliability will reach an acceptable level when the observers are well trained and given a thorough explanation regarding the specific details of the observational system. Medley and Metzel (1963) discuss other issues relating to the reliability of observational techniques and the reader is referred to their paper.

A final issue, though not strictly methodological, relates to the degree of control the researcher has over selection and supervision of the program being evaluated. In the experimental preschool the researcher may have considerable control. However, these controlled programs may not be typical of the nature of early childhood programs. Evaluations of programs other than in demonstration settings is clearly needed as many times programs developed through demonstration projects are difficult to implement in the field. In field settings the researcher may have little control. However, the ideal situation is one in which the evaluator and sponsors of the program work in a cooperative effort. It has been the author's experience that when sponsors are made aware of the necessity of evaluation and clearly understand the feedback they will receive, cooperation is generally forthcoming.

In conclusion, it is fair to say that only through both outcome and process evaluation will it be possible to develop procedures on how to best educate young children. Evaluations which take into account the issues raised in the present paper will show where there needs to be further research in early childhood education and suggest ideas for theories starting from empirical data as well as testing already established theories. As yet process analysis of the preschool situation is still just in the beginning stages and there is the need to carry out comprehensive investigations of

early childhood programs to increase our knowledge of the nature of preschool teaching and learning and the effects preschool programs have on young children.

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